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09/679,308	10/06/2000	Seiji Nonaka	2000 1402	9619

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EXAMINER

MERCADO, JULIAN A

ART UNIT

PAPER NUMBER

1745

DATE MAILED: 02/13/2002

8

Please find below and/or attached an Office communication concerning this application or proceeding.

T.D-8

Office Action Summary

Application No.

09/679,308

Applicant(s)

NONAKA ET AL.

Examiner

Mercado A Julian

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 and 54-79 is/are pending in the application.
- 4a) Of the above claim(s) 11-23 and 59-79 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 and 54-58 is/are rejected.
- 7) ☐ Claim(s) 1,2,5,6,9 and 57 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☒ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3. 6) ☐ Other: _____

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DETAILED ACTION

Priority

Acknowledgment is made of applicant's claim for priority under 35 U.S.C. 119(a)-(d) based upon two applications filed in Japan, both on January 23, 1998. A claim for priority under 35 U.S.C. 119(a)-(d) cannot be based on said applications, since the United States application 09/381,680 to which the instant case is a CIP was filed more than twelve months thereafter on September 23, 1999. Further, certified copies of these documents have not been received.

Election/Restriction

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 1-10 and 54-58, drawn to the product, classified in class 429, subclass 231.8.
- II. Claims 11-23 and 59-79, drawn to the process of making, classified in class 29, subclass 623.5.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the

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product can be made by another and materially different process such as CVD or PVD, e.g. sputtering, evaporation, or solution coating.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Mike Davis on February 6, 2002, a provisional election was made with traverse to prosecute the invention of Group I, claim 1-10 and 54-58. Affirmation of this election must be made by applicant in replying to this Office action. Claims 11-23 and 59-79 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(I).

Claim Objections

Claims 1, 2, 5, 6, 9 and 57 are objected to because of the following informalities:

- a. In claim 1 at line 1, "using in" requires changing to --use--.
- b. In claim 2 at line 3, "to" after "expose" requires deletion.

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c. In claim 5 at lines 3-4, "making contact with non-aqueous electrolyte" requires deletion as this limitation is redundant over a similar recitation in claim 1 at line 2.

d. In claim 6 at line 2, it is suggested to insert --a-- after "material is" .

e. In claim 9 at line 2, "of" after "diameter" requires changing to --in--.

f. In claim 57 at line 2, it is suggested to insert --a-- after "has".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-10 and 54-58 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1 and 54 (along with dependent claims therefrom) recite the limitation "valve metal material" in numerous instances. The meaning of "valve metal" is unclear. This term is unprecedented and unfounded in the art. From the examiner's understanding of the specification, a valve metal material is one of a metal electrode material such as a foil, plate, sheet or film. Clarification is requested in response to this Office Action.

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Claim 1 recites the limitation "numerous" in line 4. The scope of "numerous" is indefinite as it lacks metes and bounds.

Claim 54 at line 6 recites a similar limitation to claim 1 above and is rejected under the same grounds.

Claim 3 recites the limitation "the metallic surface" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim 6 recites the limitation "thin sheet". The limitation "thin" is a relative term which renders the claim indefinite. The term is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim 56 recites the limitation "a passive film thicker than a film to be naturally oxidized" in lines 2-3 of the claim. This limitation is indefinite as it lacks metes and bounds, as the thickness of a naturally oxidized film is unspecified in the claim. Thus, the relative thickness of the passive film being thicker cannot be reasonably ascertained.

Claims 2-10 and 55-58 are rejected under 35 U.S.C. 112, second paragraph, as being dependent upon a rejected base claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless --

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

For the reasons discussed above under the Priority heading, the effective filing date of the instant application is determined to be the filing date of the U.S. parent case.

Claims 1, 2, 6-8, 10, 54 and 55 are rejected under 35 U.S.C. 102(a) as being anticipated by JP 11121301A.

The examiner relies on the provided Abstract. The JP '301 teaches an aluminum collector having carbon particles projecting from a surface of the collector so that the particles are exposed. To the extent that the claims are understood by the examiner for the reasons discussed under 35 U.S.C. 112, second paragraph (discussion above), the electrode metal material is a thin sheet as can be appreciated from the figures. The carbon is reasonably presumed to be conductive as it is disclosed as an active material. The electrode is considered to be a clad material at least along the side in which the carbon particles coat its surface.

Claims 1, 2, 4, 6, 7, 8, 10, 54, 55 and 58 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamada et al (U.S. Pat. 5,723,232).

Yamada teaches a metal electrode comprising a metal material such as nickel and coated with a carbon material such as natural graphite particles. (Col. 6 line 23 et seq) Solvent coating of an electrode is specifically disclosed, thus it is reasonably presumed that the carbon layer would be projected from the surface in addition to impregnation. The resulting electrode would

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result in a clad material comprising a carbon-containing material and a base metal plate. The examiner notes that the scope of claim 54 merely recites the carbon particles to be “fixed in and exposed to a surface” of the valve metal material. Such a surface may be an internal surface such as one that is impregnated, since the claim does not further require the carbon particles to be “projected from the surface” as recited in claim 1. A double-layer electrode is shown in Figure 6. To the extent that the claims are understood by the examiner for the reasons discussed under 35 U.S.C. 112, second paragraph (discussion above), the electrode metal material is a thin sheet such as one having a thickness of 50 μm (Col. 9 line 45) The carbon material is specifically disclosed to be an active material, i.e. activated carbon. (Col. 7 line 30 et seq) The graphite particles are disclosed as fibrous in form, *inter alia*. (Col. 5 line 37)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al as applied for claims 1, 2, 4, 6, 7, 8, 10, 54, 55 and 58 above.

The teachings of Yamada are discussed above.

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While Yamada does not explicitly teach the carbon particles to have a mean diameter within the range of 0.01 to 50 μm , a disclosure is made of the carbon particles desirably not being larger than 80 μm . (Col. 5 line 41 et seq) Thus, Yamada is considered to motivate the skilled artisan to focus on diameters within the range of 80 μm or less and explore diameters below that range. Additionally, the examiner takes Official Notice that carbon particles having the instant diameter range are known in the art and would have been obvious for reasons such as optimization of surface area activity.

Claims 3, 5, 56 and 57 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamada et al as applied for claims 1, 2, 4, 6, 7, 8, 10, 54, 55 and 58 above, in view of Fauteux et al (U.S. Pat. 5,853,917).

The teachings of Yamada are discussed above.

To the extent that the claims are understood by the examiner for the reasons discussed under 35 U.S.C. 112, 2nd paragraph (discussion above), Yamada does not explicitly teach the metallic surface of the carbon-containing metal coated with a passive film. However, Fauteux teaches a passive or passivation layer onto a carbon-containing metal electrode. (Col. 4 line 61 et seq) It appears to the examiner, in view of Figure 2, that the passivation layer is of considerable thickness reasonably presumed to be thicker than what would naturally occur. Thus, the skilled artisan would have found obvious to modify Yamada's invention by employing a passive layer for reasons such as prevention of solvent decomposition and gas formation within the cell. As to this passive film having a higher withstand voltage than 3 V, it is reasonably presumed that since

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all the structural claim limitations are rendered obvious, this property would naturally flow, at least as would be obvious to the skilled artisan.

Yamada does not explicitly teach the electrode metal material as the cathode. However, Fauteux specifically teaches that the anode and cathode designations are interchangeable depending on the charge or discharge cycle of the cell. (Col. 4 line 52 et seq) Thus, the skilled artisan would readily find obvious that either electrode would function as both a cathode and anode in a secondary cell depending on the cell's cycle.

Conclusion

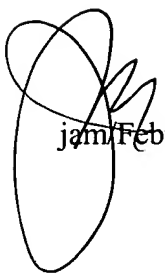
The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent 4,844,994 to Koshiha et al teaches a double-layer electrode structure for a lithium battery.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julian A. Mercado whose telephone number is (703) 305-0511.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gabrielle Brouillette, can be reached at (703) 308-0756. The official fax phone number for the organization where this application or proceeding is assigned is (703) 305-3599. The unofficial fax number is (703) 306-3429.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0661.



jam/February 7, 2002



STEPHEN KALAFUT
PRIMARY EXAMINER
GROUP 1700